

THE CRITERIA AND POTENTIAL ADAPTIVE REUSE OF PRE-WAR
SHOPHOUSES

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A thesis report submitted in partial
fulfilment of the requirement for the award of the
Master Degree in Civil Engineering



Faculty of Civil and Environmental Engineering
Universiti Tun Hussein Onn Malaysia

AUGUST 2018

DEDICATION

For my beloved mother and father,

Mohd Abdullah Bin Ismail

Rohama Binti Mohamed

Thank you for all the sacrifices and love that you devoted.

Beloved,

Dear all lecturers especially Dr. Azeanita Binti Suratkon for nonstop giving and sharing of knowledge.

Friends and colleagues,

Thank you for all the encouragement, support and guidance.



ACKNOWLEDGEMENT

Grateful to Allah for me giving the strength to complete my study in a timely manner. Advance gratitude addressed to Dr. Azeanita Binti Suratkon for all guidance and assistance provided throughout the duration of the study. Not to forget also for my ex-academic advisors, Dr. Mohammad Ashraf Bin Abdul Rahman and my ex-lecturers, Dr. Nor Haslina Binti Hashim and Mdm. Noor Khazanah Binti A Rahman during bachelor degree for advice, guidance and knowledge that were shared.

A special appreciation for both of my parent Mr. Mohd Abdullah Bin Ismail and Mdm. Rohama Binti Mohamed and all family members for their support and encouragement in completing this study.

Thank you also to Mr. Norhiysam Bin Mohamad@Samad, -town planning officer from Batu Pahat Municipal Council (MPBP), Mdm. Siti Asiah Binti Hasbie assistant valuer from Valuation and Property Service Department (JPPH) Batu Pahat, and all the comrade who have been lending helps in many ways from the outset until the completion of this study. Next, gratitude also goes to all the panels for their constructive comments and inputs as well as encouragement.

Final words, thanks to all parties involved either directly and indirectly assist in assisting the completion of this research.

May you all be blessed by Allah S.W.T in this world and the hereafter.

ABSTRACT

Pre-war shophouses in some town areas of Malaysia are among national heritage buildings which require conservation efforts, among other through adaptive reuse. Adaptive reuse, in line with sustainability principles, is a process to revitalise or reinvent disused or ineffective existing buildings including old or historical buildings for new use, purpose or function. The aim of this study is to propose the decision-making in selecting the optimal reuse of pre-war shophouses by considering the importance criteria that are influenced the adaptive reuse process. A questionnaire survey among four (4) selective respondents consist of town planner from local authorities, valuer from valuation and property service department (JPPH), architects and building owners conducted to achieve the objectives. From the analysis, five (5) potential new uses which are new shophouses, pharmacy hotel, rental house and a restaurant were identified as a very suitable. Thirty-three (33) criteria were classified into six aspects which are economic, environment, social, architecture, technology, and legislative. Out of them, sixteen (16) criteria were identified as very important to be considered in deciding adaptive reuse for pre-war shophouses. The outcome of this study is a conceptual framework that can assist stakeholders, especially local authorities, Valuation and Property Service Department (JPPH), architects and building owners, in adaptive reuse decision-making process. This conceptual framework proposedly can be used by architects as the main actors in adaptive reuse process, building owners since they are the most entitle person to decide any conversion on their buildings, and government bodies since they are involved directly in preparing the guidelines for conservation of pre-war shophouse.

ABSTRAK

Rumah kedai pra-perang di beberapa kawasan bandar di Malaysia adalah antara bangunan warisan negara yang memerlukan usaha pemuliharaan, antara lain melalui adaptasi guna semula. Adaptasi guna semula, selaras dengan prinsip-prinsip kemampanan dan proses untuk merevitalisasi atau mencipta kembali bangunan yang tidak digunakan atau tidak berkesan yang sedia ada termasuk bangunan lama atau sejarah untuk digantikan dengan penggunaan, tujuan atau fungsi baru. Tujuan kajian ini adalah untuk mencadangkan idea dalam membuat keputusan berkenaan pemilihan adaptasi guna semula rumah kedai pra-perang dengan mengambil kira kriteria penting yang mempengaruhi proses adaptasi guna semula. Kajian soal selidik di kalangan empat (4) responden terpilih terdiri daripada perancang bandar dari pihak berkuasa tempatan, penilai dari jabatan perkhidmatan dan penilaian harta (JPPH), arkitek dan pemilik bangunan yang dijalankan untuk mencapai matlamat. Dari analisis, lima (5) kegunaan baru yang berpotensi diadaptasi guna semula adalah untuk menjadi rumah kedai baru, hotel, farmasi, restoran dan rumah sewa. Tiga puluh tiga (33) kriteria dikelaskan kepada enam aspek iaitu ekonomi, persekitaran, sosial, seni bina, teknologi, dan perundangan dan daripada itu, enam belas (16) kriteria telah dikenal pasti sebagai sangat penting untuk dipertimbangkan dalam menentukan penggunaan semula penyesuaian untuk rumah kedai pra-perang. Hasil kajian ini adalah rangka kerja konsep yang boleh membantu pihak berkepentingan, terutama pihak berkuasa tempatan, Jabatan Penilaian dan Perkhidmatan Harta (JPPH), arkitek dan pemilik bangunan, dalam proses membuat keputusan adaptasi guna semula ini. Konsep rangka kerja ini yang dicadangkan boleh digunakan oleh arkitek sebagai pihak utama dalam proses adaptasi guna semula, pemilik bangunan kerana mereka adalah orang yang paling berhak untuk memutuskan apa-apa perubahan di bangunan mereka, dan badan kerajaan kerana mereka terlibat secara langsung dalam menyediakan garis panduan untuk pemuliharaan rumah kedai pra-perang.

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LIST OF SYMBOLS AND ABBREVIATIONS

ARP	Adaptive Reuse Potential
CPWD	Central Public Works Department
DoEH	Department of Environment and Heritage
JPPH	Jabatan Penilaian dan Pengurusan Harta
LAM	Lembaga Arkitek Malaysia
ODASA	Office for Design and Architecture, Government of South Australia
RKK	Rancangan Kawasan Khas
UNESCO	United Nations Educational, Scientific and Cultural Organization
CF	Conceptual Framework



CHAPTER 1

INTRODUCTION

Chapter 1 explains research in study background, problem statement, research questions and the objectives. At the end of chapter, the study scope, limitation and significance of study are mentioned.

1.1 Background of Study

Malaysia is a developing country with many historic settlements and cultural important. It is worthy to conserve and adapt them to the new needs of future generation (Ismail, 2012a; Ismail, 2012b). Ismail (2013) stated that the continuous use of heritage assets is a way to preserve heritage identity and values. At the same time, they can be prevented from being demolished and replaced by new items.

Before the World War II, Malaysian towns were acknowledged by a line of streets with typical two-storey high shophouses, where the upper floor was used for residency while lower floor was for a business purpose (Awang & Denan, 2017). The pre-war shophouses had basically adapted the knowledge and method of construction from Chinese immigrants and west coloniser in the 19th century (Gullick, 2000; Awang & Denan, 2017). These buildings are now under extinction threats because of many factors, such as modernisation, economic interest, conflict of interests and lack of awareness in regard to their heritage values that had subsequently led to their

demolition to make way for new constructions. A study by Shuhana *et al.*, (2005) showed that there are old towns in Malaysia, particularly in Kuala Terengganu, Alor Setar, Kota Bharu and Batu Pahat, and clarified that a lot of the old shophouses in the towns were in broken-down state. Eventhough the government and public have started to be concerned about this case, in the absence of an effective legal protection; Malaysian cultural heritage continues to disappear at an alarming rate (Shuhana *et al.*, 2005; Ismail, 2015). Pre-war shophouse buildings can become inappropriate for their original purpose or function due to obsolescence, or they can become redundant due to change in demand for their service. At these times, demolition is likely to make way for new construction or some form of refurbishment or reuse (Langston & Lauge-Kristensen, 2002; Langston & Shen, 2010; UNESCO, 2013). It was supported by Johnson (1996) who stated that “advances in technology and commerce, including the industrial growth and office automation, as well as user demands for a more comfortable work and leisure environments have led to many buildings becoming obsolete or redundant”.

According to Bullen & Love (2010), as cited by Yung, Esther & Chan (2012), adaptive reuse is a process that can be utilised to give disused or ineffective pre-war shophouses a new life that can be used for a different purpose. Adaptive reuse is an approach of converting buildings to a new purpose, if a particular function is no longer relevant or desired. Existing buildings that are obsolete or rapidly approaching disuse and potential demolition are still having their basic building structure and fabric intact and are possible to be maintained and changed for their new function or purpose use. This approach contributes to their sustainable development as ‘breathing new life’ into existing buildings while carrying with them environmental and social benefits and consequently helps to retain national heritage (Langston *et al.*, 2008). The conversion of existing building structure is sustainable as the building materials are reused, and the morphological structure of an urban area is retained. This contributes to an understanding of the place and increases its historical value (Remoy & Van der voortdt, 2007). The composition and spectrum of various criteria related to adaptive reuse potential (ARP) can be categorised within six aspects, such as environmental, economic, social, technological, architectural and legislative aspects, to facilitate the ARP-related decisions: determine the need (or suitability) for adaptation; select viable new functions; identify the improvements or

change points to suit the selected future use of existing buildings (Suratkon & Ando, 2010).

1.2 Problem Statement

Heritage buildings, such as pre-war shophouses in Malaysia, are of really rich-valued qualities, whereby the public are very concern to protect and enhance their history, architecture, culture and strong sense of community (Baroldin & Din 2012). But, lack of awareness about the preservation of heritage buildings has inclined the public to renovate, refurbish or even demolish their buildings which have a heritage value without referring to the authorities. The buildings are exposed to the problems of decay and pollution, particularly evident in neglected and unoccupied premises (Baroldin & Din 2012).

There are some pre-war shophouses left vacant and overgrown with wild-plants and some damaged old buildings are left in disrepair for a long time and have collapsed over time. Many old towns in Malaysia, such as Kuala Terengganu, Alor Setar, Kota Bharu and Batu Pahat are gazetted under heritage zone (Said *et al.*, 2013). Batu Pahat is one of the developed districts. The physical development of Batu Pahat old town is gradually declining besides facing competitive development from Malacca as a Heritage Town and Johor Bahru as a new town. Its town was lined along streets with a lot of pre-war shophouses which were clarified in a broken-down state (the Valuation and Property Service Department, (JPPH) Batu Pahat). These buildings are typical two- storey shophouses, with the ground floor for trading and the first floor for residential use and are still a standard feature in the centres of Malaysian towns and cities. The buildings should be modified to ensure a nice look and in line with a rapid development without missing a heritage value. These buildings are important for the understanding of the city's social environment and important period of the city's growth (Ismail, 2015).

In this study, adaptive reuse was practised for pre-war shophouses to maintain the heritage important and help to ensure their survival. Building owners, local authorities and architects are the major stakeholders who may influence the decision on adaptive reuse alternatives for pre-war shophouses in Malaysia. The government, through the National Heritage Act 2005 (formerly known as the Antiquity Act 1976), and manual or guidelines for conservation works based on the National Heritage Act 2005 prepared by state governments and municipal councils

(Mydin *et al.*, 2014), attempts to ensure that these pre-war shophouses and their historic fabrics are preserved and conserved. For the same objective, the Johor government requests owners to consult the state government before tearing down or renovate their buildings (Musa, 2013). As for architects, who are normally the leader of conservation specialists, their judgements will vary case by case (Wang & Zeng, 2009), and normally more focused on the tangible aspects of a building, such as the physical look and material used in conserving a heritage building (Hasbollah, 2014). In carrying out the adaptive reuse pre-war shophouses, building owners have a typically simple minded mentality with their only concerns are on beautifying the exterior parts of building, modernising the interior while neglecting the traditional features, and allowing faulty design (Mydin *et al.*, 2014). In other words, all stakeholders have different concerns. Because of that, the decision on optimal adaptive reuse of the buildings is a difficult task.

From the above mentioned current scenario, the existence of our pre-war shophouses are at risks due to factors such as inclination of the public to prioritise beautiful appearance in converting their shophouse buildings and neglecting their historical values, some of them are being left vacant, and the most important is the unclear commitment from the government to conserve them. Therefore, this study aims to propose adaptive reuse criteria that fit with potential new uses that can somewhat facilitate stakeholders such as governments, owners or architects in initiating any adaptive reuse of pre-war shophouses effort.

1.3 Research Questions

The research questions for this study are as follows:

- i. What are the available potential adaptive reuse alternatives for pre-war shophouses?
- ii. What are the important criteria for pre-war shophouses to be adaptive reused?
- iii. How to use the criteria in selecting the optimal adaptive reuse alternative for pre-war shophouses?

1.4 Objectives

The aim of this study is to propose conceptual framework on adaptive reuse criteria and potential new use of pre-war shophouses. With regards to the aim, the following three objectives need to be achieved.

- i. To identify the potential adaptive reuse alternatives available for pre-war shophouses.
- ii. To determine important adaptive reuse potential (ARP) criteria for selected new use of pre-war shophouses.
- iii. To propose a conceptual framework on adaptive reuse potential (ARP) for pre-war shophouses.

1.5 Scope and Limitation

This study employed questionnaire survey distributed to four (4) key parties involved in adaptive reuse of pre-war shophouses in example town planners from the local authorities, valuers from the Valuation and Property Service Department (JPPH), architects throughout Peninsular of Malaysia and pre-war shophouses owner (in Bandar Penggaram, Batu Pahat, Johor only). The data was analysed using descriptive analysis to achieve the first and second objectives. In order to accomplish the third objective, a conceptual framework on the adaptive reuse potential of pre-war shophouses was proposed by utilising and summarising the findings of the first two objectives.

1.6 Significance of Study

The developed conceptual framework of adaptive reuse potential (ARP) can be used by relevant key parties, especially building owners and governmental bodies (Local Councils and State Departments) to facilitate stakeholders in decision-making in selecting the optimal potential new use to conserve pre-war shophouse buildings in urban cities with careful consideration towards imperative adaptive reuse criteria in

that process. This will positively contribute to the nation with effective heritage buildings conservation in line with the National Heritage Act 605 requirement.

1.7 Chapter Outline

Chapter 1 – This chapter is explains the background, problem statement, research questions, objectives, scope and limitation, and significance of the study.

Chapter 2 – This chapter elaborates the principles and benefits of adaptive reuse, criteria that influence adaptive reuse decision making, the background of brief history of pre-war shophouses and highlights their potential new uses for adaptive reuse effort. The criteria are grouped into six (6) aspects which are economic, environment, social, technology, legislative and architecture. The agencies, act and guidelines related to the heritage buildings in Malaysia are also explained.

Chapter 3 – This chapter explains the research method employed for this study which mainly covers the data collection strategy (questionnaire survey) and descriptive analysis techniques.

Chapter 4 – This chapter is describes the analysis and discussion for the data collected through the questionnaire survey survey which covers the first and second objectives of the study. The finding of the first and second objective objectives are then summarised and utilised for proposing a conceptual framework on adaptive reuse potential of pre-war shophouses.

Chapter 5 – This chapter concludes the achievement of all the objectives. The constraint and limitation of this study, as well as recommendation for further studies related to this study are addressed in this chapter.

1.8 Summary

This chapter has explained the background and motivation of conducting this study. With aim to propose a conceptual framework on adaptive reuse potential of pre-war

shophouses, three (3) objectives have been set to be achieved within specified scope using quantitative research approach.

CHAPTER 2

LITERATURE REVIEW

The purpose of this chapter is to provide an understanding on the criteria for opting adaptive reuse as an approach to revitalising existing and old buildings including pre-war shophouses, also the background, characteristics, and potential new use of pre-war shophouses in Malaysia. After giving definition of the adaptive reuse and pre-war shophouses, this chapter explains the act, guidelines and manuals produced by authorised authorities in governing the use and protection of heritage buildings in Malaysia. Then, typical types and potential new use of pre-war shophouses in Malaysia are addressed. Finally, principles and benefit of adaptive reuse and criteria that influence the decision for adaptive reuse are discussed.

2.1 Introduction

Malaysia is a developing country with a lot of existing buildings that are mostly left in poor and invaluable condition (Ahmad, 2009). The government is aware of

developing a sustainable country by adopting green elements to the new buildings. However, according to Mohamed & Alauddin (2016), sustainable concept cannot be achieved by considering only new buildings stock, unless the existing and heritage building stocks are being carefully addressed.

According to Dewiyana *et al.*, (2016), the shophouses terms were already mentioned during early 1884 and during 1793. Francis Light also mentioned shop houses as it belonging to Chee Ean Chinaman. Shop house is a modern terrace house characteristic of Asian towns from the 18th – 20th century. The shop house usually incorporates a shop or business premise on the ground floor while the family resides on the top floor, providing both convenience and security. The shophouse may also be used totally as dwelling quarters (Dewiyana *et al.*, 2016). A shophouse is defined as a two-storey to four-storey building, with a business on the ground floor and the shop owner's residence on the first floor (Yung *et al.*, 2014). According to UNESCO (1972) as cited by Bahauddin & Prihatmanti (2014), pre-war buildings are legacies from a past man-made environment that represent cultural history and should be preserved for the next generation. This building refers to the old buildings with artifacts, structures, areas and precincts that have historic value, aesthetic, architectural or cultural important and should include natural features within such areas or environmental important or scenic beauty (the Central Public Works Department, 2013). Usually the design used thick brick walls which can keep out the mid-day sun, lime plastered walls and terracotta floors to disperse cool moisture with louvered shutters to keep out the glaring sun and allowing cool breezes (Dewiyana *et al.*, 2016).

Pre-war shophouses can be defined as shophouse buildings that are constructed before the Second World War (1940) in Southeast Asia (Tan & Fujita, 2014). In Malaysia, a total of 23,953 pre-war shophouse buildings were recorded in the *Commercial Property Stock Table Q1 2017* by the Valuation and Property Service Management (JPPH). Perak, Pulau Pinang and Johor recorded the highest number of pre-war shophouse buildings in Malaysia with 5,798, 4,816 and 2,794, respectively, as shown in Figure 2.1.

Pre-war shophouses was built in row and each row is arranged in blocks contained within a grid of main roads, backlanes and side roads. Each row of shophouses is adjoined by a continuous sheltered five-foot way and a decorative façade which reveals a historical style. Material used in construction of pre-war

shophouses is locally available and suited to local geology and weather conditions (Dewiyana et al., 2016). The building orientation is a perfect example of green building practice as it installing a natural ventilation and cooling process (Jeffrey Chan, 2013).

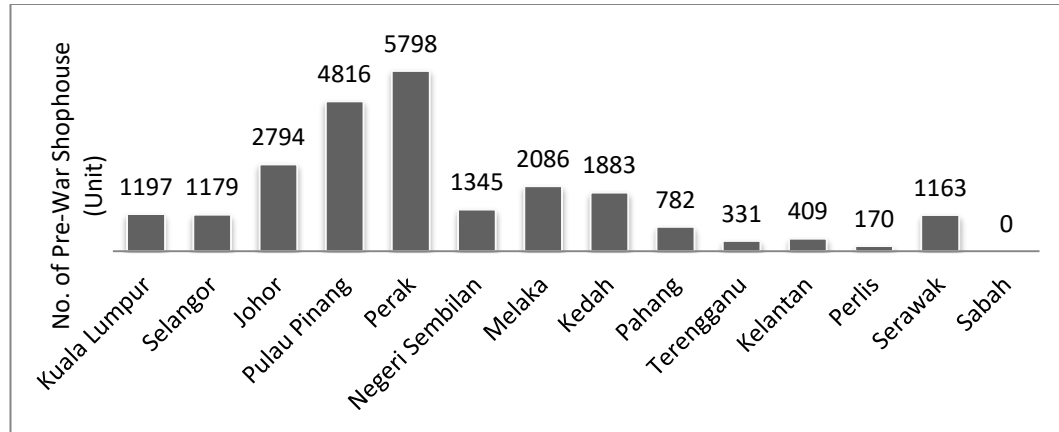


Figure 2.1: Distribution of pre-war shophouses in Malaysia

Through an exploratory study of the past research works in journals, books and documentary (documentation?), the architectural of pre-war shophouses in Malaysia is mainly influenced by Chinese and Dutch decorative elements. According to Weebers *et al.*, (2010) the front section of the shophouses went through a diverse transformation process during the Portuguese, Dutch and English periods in Melaka. Chinese characteristics of the shophouses were the Chinese-style front pitched façade roofs which gave way to the gable façade as seen in the church buildings during the Renaissance. Chinese characteristics of the shophouses are the simple and very functional form with exposure of structural elements, architecture, revealing pillars, bracketing systems, beams, and rafters (Kohl 1986). Commonly the Chinese influence in shophouses building are obviously can be detected through the materials used which are timber, mortar and terracotta. In addition, Chinese characteristics of shophouses are installed by a fire wall in the form of cat crawling, square ventilation holes and an indoor screen (Raja, 2008). Besides that, Dutch decorative influence is also the most commonly found in Malaysia and they are different with Chinese decorative influence in some way. The door and rectangular window on the ground floor in two halves' and the window on the first floor of which the frames are made of hardwood and iron hinges on the doors and windows. Over the door or windows, in the outside wall, small rectangular of semi-circular vents are placed. Sometimes

these houses have iron wall anchors in the outside walls of the houses. It was installed to secure the beams which were in the walls on the inside of the house. The doors and windows have heavy hardwood framing. The sloping roofs are covered with tiles and walkaway typically terracotta tiles in front of the house.

Pre-war shophouses need to be conserved in a way to extend life and prevent them from becoming forsaken and derelict. The idea of protecting existing old buildings through conservation, preservation, adaptive reuse and restoration was not given the same importance as a new development (Bullen & Love, 2011a). Said *et al.*, (2013) stated that the Southeast Asia people are still in debate over whether to develop or demolish while the western world practises conservation of historic towns. It shows that Asian countries are left behind in this aspect. Pre-war shophouse buildings usually change in several levels according to owner needs. However, every change and renovation planning for these types of building must get an approval from the local authorities to ensure that the heritage and cultural values of the buildings are not neglected and demolished. Baroldin & Din (2012) identified the level of intervention amongst heritage buildings, as summarised in Table 2.1.

Table 2.1: The level of intervention in heritage buildings

No	Level of Intervention	Explanation
1	Preservation	Maintaining artifacts in its current physical condition
2	Restoration	Returning artifact to previous stage of life (physical condition)
3	Refurbishment/conservation)	Physical intervention (fabric) to continue the performance
4	Reconstitution	Piece by piece re-assembly (in-situ/ new site)
5	<i>Adaptive reuse (conversion)</i>	<i>Adaptation of buildings to accommodate a new site</i>
6	Reconstruction	Recreation of vanished buildings on their original site
7	Replication	Construction of an exact copy of an existing building
8	Façadism	Preservation of façade with new building behind it
9	Demolition and redevelopment	Demolition and clearance with a new development on the site

Adaptive reuse is defined as a process that changes a disused or ineffective item into a new item that can be used for a different purpose and importantly improves the financial, environmental and social performances of existing built assets (the Department of Environment and Heritage, 2004; Bullen & Love, 2011b).

Adaptive reuse is reinventing existing buildings for new use by considering some criteria. The process will start by identifying the characteristics of structure and then imagining how the features can be applied for a new purpose and at the same time give respect to the building original design, especially for heritage buildings. According to the Office for Design and Architecture, Government of South Australia (ODASA, 2014) adaptive reuse is a process to explore the option for buildings, either seeking extremes of demolition or turning the building into a museum. Adding a new layer without erasing earlier layers, ODASA (2014) was stated an adaptive reuse project becomes part of the long history of the site stage, not the final outcome.

Adaptive reuse is an approach of converting buildings, of a particular function that is no longer relevant or desired to a new purpose. Existing buildings that are obsolete or rapidly approaching disuse and potential demolition, but their basic structure and fabric of the building intact, are possible to be maintained, and change their use for a new function or purpose. This approach contributes to sustainable development as 'breathing new life' into existing buildings which carries with them environmental and social benefits and helps to retain national heritage (Langston *et al.*, 2008b). The conversion of existing building structure is sustainable as the building materials are reused, and the morphological structure of an urban area is retained. This contributes to an understanding of the place and increases its historical value (Remoy & Van der voortd, 2007). Existing buildings, especially old or historic buildings, can become inappropriate for their original purpose or function due to obsolescence, or can become redundant due to the change in demand for their service. At these times, demolition is likely to make way for new construction or some form of refurbishment or reuse (Langston & Lauge-Kristensen, 2002).

2.2 Agencies, Act and Guidelines Related to Management of Heritage Building

Heritage cities in Malaysia have a lot of buildings and monuments built of pre-war season. Urbanisation process will come with rapid population growth and economic development, and become a big problem in conserving heritage buildings (Mohamed *et al.*, 2001; Said *et al.*, 2013). Heritage cities in Malaysia, especially Georgetown and Malacca, were listed as UNESCO Heritage site on 7 July, in 2008, growing intensively as a tourism heritage site, and enlightening government to conserve every

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